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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/632,343	08/01/2003	John B. Letts	P02030US2A(336)	3593

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EXAMINER

COONEY, JOHN M

ART UNIT	PAPER NUMBER
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1711

DATE MAILED: 05/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/632,343

Applicant(s)

LETTS ET AL.

Examiner

John m. Cooney

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 30-41 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 30-41 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3-10-06 has been entered.

The following rejections are set forth or maintained in light of applicants' amendments:

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1 and 30-41 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims are confusing as to intent because the basis and conditions for determining the Bunsen coefficient values of the claims are not recited in the claims. While the ordinary practitioner can derive from the specification and original claims that the conditions utilized to determine the Bunsen Coefficient deviation values for the amounts of air set forth at page 10 of the supporting disclosure are used to determine

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the amounts of nitrogen dissolved in mixtures. However, the claims must recite the temperatures and pressures used to calculate these values (see page 10 line 29 of applicant's supporting disclosure where it is recited that the values disclosed are calculated at 75⁰C and 1 atmosphere pressure), and what component(s) from the method(s) the values are calculated from (the isocyanate reactive stream, the isocyanate stream, and/or the entire mixture). Support for any amendments indicating what streams the calculations are based must be shown to be provided for by the original supporting disclosure.

Claims 39-41 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 39-41 are further seen to be confusing as to intent, in addition to the above reasons, because the language "for nitrogen dissolved in the stream" is lacking. This omission further confuses determination of what claim elements the recited Bunsen Coefficient values of the claims are intended to be defining.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 41 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which

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was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The recited Bunsen Coefficient value of claim 41 lacks support in the originally filed supporting disclosure. This is a new matter rejection.

Claim 39 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The recited volume increase value of claim 39 lacks support in the originally filed supporting disclosure. This is a new matter rejection.

The value recited at page 10 line 9 of the original supporting disclosure corresponds to air and not nitrogen, and the originally submitted claims do not provide support for this range of values for nitrogen like they do for the other ranges of values now claimed.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 30-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Raynor et al.(3,882,052) in view of Volkert et al.(5,278,195).

Raynor et al. discloses preparations of isocyanate-based rigid foams prepared by contacting streams of isocyanate component and a polyol component wherein contacting takes place in the presence of blowing agent and nitrogen gas to enhance the foaming action and wherein the materials are applied to a surface which meet the criteria of "laminator" as defined by the claims (see the entire document).

Raynor et al. differs from applicants' claims in that amounts of nitrogen gas employment to reach the claimed Bunsen Coefficient values are not particularly disclosed. However, Raynor et al. discloses wide variation contents of nitrogen (see column 4 lines 15-32) for the purposes of providing acceptable foams for their invention. Accordingly, it would have been obvious for one having ordinary skill in the art to have employed the nitrogen gas of Raynor et al. over the wide ranges of amounts contemplated by the teachings of Raynor et al. for the purpose of providing its acceptable foam forming effect in order to arrive at the processes of applicants' claims with the expectation of success in the absence of a showing of new or unexpected results. Raynor et al. is not seen to be limited to the particularly recited low content values recited in their disclosure, and, in fact, Raynor et al. particularly recites that higher concentrations may be employed.

Raynor et al. teaches control of the flow rates of its reactants (see column 6 line 65 et seq.), but the disclosure differs from applicants' claims in that it is concerned with the formation of polyurethane foams. However, Volkert et al. discloses that control in

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the relative amounts of reactive materials dictates formation of isocyanurate foam products rather than polyurethane foam products when preparing isocyanate based foams (see column 17 lines 17-35, as well as, the entire document). Additionally, Volkert et al. teaches the motivation of achieving increased flame retardancy as one reason to desire such a modulation in reactant amounts. Accordingly, it would have been obvious for one having ordinary skill in the art to have modified NCO indexes in the manner taught by Volkert et al. within the practice of the processes of Raynor et al. for the purpose of increasing fire retardancy in the articles realized in order to arrive at the processes of applicants' claims with the expectation of success in the absence of a showing of new or unexpected results.

Raynor et al. differs from the claims in that it does not require alkane blowing agents, additionally or to the exclusion of haloalkanes, as submitted in the new claims. However, Volkert et al. discloses alkanes (see column 10 lines 42-46) for their foaming effect in related isocyanate based formulations. Accordingly, it would have been obvious for one having ordinary skill in the art to have employed the alkanes disclosed by Volkert et al. within the teachings of Raynor et al. for the purpose of providing acceptable foam forming effects in order to arrive at the processes of applicants' claims with the expectation of success in the absence of a showing of new or unexpected results.

Applicants' additional limitations regarding addition of nitrogen to supply streams are held to be within teachings readily envisioned by Raynor et al.'s disclosure of preparing their preparations through any suitable apparatus.

Applicants' arguments have been considered, but rejection is maintained for the reasons set forth above. Allegations of distinction based on the Bunsen Coefficient values of the claims is not supported by a showing of new or unexpected results attributable to the nitrogen content values as claimed.

Applicants' latest arguments and affidavit have been considered, but do not serve to demonstrate failure of the rejection set forth nor do they set forth a showing of new or unexpected results attributable to the range of nitrogen content values defined and/or encompassed by the claims. Raynor et al. is seen and maintained to suggest values beyond those specifically mentioned at column 4 lines 29-30 (note column 4 lines 30-32).

Applicants have not clearly and definitively demonstrated what the values of their claims, or the volume percent values to which they may correspond, correlate to in terms of "percent by weight" as recited by Raynor et al. Such a demonstration is seen to be necessary if applicants' intend to argue that clear divergence from the full teachings of Raynor et al. is evident. Raynor et al.'s teaching and suggestion of suitably employable amounts is sufficient to support the rejection as set forth above based on the record as it now stands.

Claims 1 and 30-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wishneski et al.(5,264,464) in view of Volkert et al.(5,278,195).

Wishneski et al. discloses preparations of isocyanate-based rigid foams prepared by contacting streams of isocyanate component and a polyol component wherein contacting takes place in the presence of blowing agent and nitrogen gas to enhance the foaming action (see the entire document).

Wishneski et al. differs from applicants' claims in that amounts of nitrogen gas employment to reach the claimed Bunsen Coefficient values are not particularly disclosed. However, Wishneski et al. discloses particular desirability to dissolve nitrogen in the contents of their methods (see column 7 lines 28-41) for the purposes of providing acceptable foams for their invention. Accordingly, it would have been obvious for one having ordinary skill in the art to have employed varied contents of the nitrogen gas of Wishneski et al. within the teachings of Wishneski et al. for the purpose of providing its acceptable foam forming effect in order to arrive at the processes of applicants' claims with the expectation of success in the absence of a showing of new or unexpected results.

Wishneski et al. teaches control of the flow rates of its reactants (see column 9 lines 32-34), but the disclosure differs from applicants' claims in that it is concerned with the formation of polyurethane foams. However, Volkert et al. discloses that control in the relative amounts of reactive materials dictates formation of isocyanurate foam products rather than polyurethane foam products when preparing isocyanate based foams (see column 17 lines 17-35, as well as, the entire document). Additionally, Volkert et al. teaches the motivation of achieving increased flame retardancy as one reason to desire such a modulation in reactant amounts. Accordingly, it would have

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been obvious for one having ordinary skill in the art to have modified NCO indexes in the manner taught by Volkert et al. within the practice of the processes of Wishneski et al. for the purpose of increasing fire retardancy in the articles realized in order to arrive at the processes of applicants' claims with the expectation of success in the absence of a showing of new or unexpected results.

Wishneski et al. differs from the claims in that it does not require alkane blowing agents, additionally or to the exclusion of haloalkanes, as submitted in the new claims. However, Volkert et al. discloses alkanes (see column 10 lines 42-46) for their foaming effect in related isocyanate based formulations. Accordingly, it would have been obvious for one having ordinary skill in the art to have employed the alkanes disclosed by Volkert et al. within the teachings of Wishneski et al. for the purpose of providing acceptable foam forming effects in order to arrive at the processes of applicants' claims with the expectation of success in the absence of a showing of new or unexpected results. Additionally, it is *prima facie* obvious to substitute equivalents, motivated by the reasonable expectation that the respective species will behave in a comparable manner or give comparable results in comparable circumstances. *In re Ruff* 118 USPQ 343; *In re Jezel* 158 USPQ 99; the express suggestion to substitute one equivalent for another need not be present to render the substitution obvious. *In re Font*, 213 USPQ 532.

Applicants' additional limitations regarding addition of nitrogen to supply streams are held to be within teachings readily envisioned by Wishneski et al.'s disclosure of preparing their preparations through any suitable apparatus.

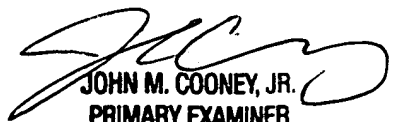
Applicants' arguments have been considered, but rejection is maintained for the reasons set forth above. Distinction based on the Bunsen Coefficient values of the claims is not seen to be supported by a showing of new or unexpected results attributable to the nitrogen content values as claimed.

Applicants' latest arguments and affidavit have been considered, but do not serve to demonstrate failure of the rejection set forth nor do they set forth a showing of new or unexpected results attributable to the range of nitrogen content values defined to be employed and encompassed by the claims. Applicants have not demonstrated divergence between the values as defined by their claims, or the volume percent values to which they may correspond, and those taught or fairly disclosed by Wishneski et al. to a degree that rejection as set forth and maintained above is seen to fail. Evidence of differences between the claims and cited prior art must be based on fact.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Cooney whose telephone number is 571-272-1070. The examiner can normally be reached on M-F from 9 to 6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck, can be reached on 571-272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


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